



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,723	01/29/2001	Peter G. Webb	10010016-1	1312

7590 06/25/2004

AGILENT TECHNOLOGIES  
Legal Department, 51U-PD  
Intellectual Property Administration  
P.O. Box 58043  
Santa Clara, CA 95052-8043

EXAMINER

SMITH, CAROLYN L

ART UNIT PAPER NUMBER

1631

DATE MAILED: 06/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/772,723	<b>Applicant(s)</b> WEBB, PETER G.	
	<b>Examiner</b> Carolyn L Smith	<b>Art Unit</b> 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 15-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-44 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04132004</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1631

### **DETAILED ACTION**

Applicant's amendments and remarks, filed 4/13/04, are acknowledged.

Applicant's arguments, filed 4/13/04, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from the previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

The information disclosure statement filed 4/13/04 fails to comply with the provisions of 37 CFR 1.97, 1.98, and MPEP § 609, because European Patent Office Communication (dated 10/24/03) is not a publicly available published document. It has been looked at by the Examiner, but it is not officially recognized as a publicly available published document.

Claims 1-14 are herein under examination.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1631

The rejection of claims 1-14 is maintained under 35 U.S.C. 103(a) as being unpatentable over Hunkapiller et al (P/N 5,942,609), in view of Zeleny et al. (P/N 6,215,894), Brown et al. (P/N 5,807,522), Anderson (P/N 6,456,942), Shakib et al. (P/N 5,812,793), and Balaban et al.

This rejection is maintained and reiterated for reasons of record.

Hunkapiller et al. describe creating arrays with addressable locations where multiple biopolymer samples can be fixed or mounted in fixed locations (col. 18, lines 11-21). Hunkapiller et al. describe liquid reagents being delivered from vessels to solid supports (col. 5, lines 10-12) which include addressable arrays (col. 9, lines 18-21). Hunkapiller et al. describe assembly of a polynucleotide, including DNA, on a solid support (abstract and col. 6, lines 56-59). Hunkapiller et al. do not describe saving in a memory a map of the identity of the vessels corresponding to substrate regions where the biopolymers are deposited, applying the map identifier to the substrate or housing carrying the substrate, or shipping the fabricated array with applied map identifier to a remote location. Hunkapiller et al. do not teach the method of generating the array at a central fabrication station and making associated map identifiers that are communicated to physically remote stations and from the central fabrication station. Hunkapiller et al. also do not teach the communication of the information via network (i.e., LAN (Local Area Network), WAN (Wide Area Network), e-mail, etc.) or computer readable storage media.

Zeleny et al. describe an identifier corresponding to each experiment imprinted on the biochip (col. 2, lines 13-14) which represents a portable storage medium. Zeleny et al. describe the identifier is machine-readable which is imprinted on the chip prior to deposition of the array experiment (col. 2, lines 18-20). Zeleny et al. describe a file is opened on a computer system where the operator may enter various parameters of the experimental array including a map of

Art Unit: 1631

the reagents deposited in the array (col. 2, lines 20-25). Zeleny et al. describe a computer-stored record corresponding to each identifier (abstract) which is reasonably interpreted as a database.

Brown et al. describe mass fabrication of microarrays (col. 2, lines 20-25) and shipment of DNA reagents via microarrays to researchers (col. 14, lines 36-42).

Balaban et al. teach that portable storage media may be used to carry information between computers (col. 6, lines 16-18).

Anderson describes a server that designs a set of probes to capture target sequences requested by a user, a synthesizer (fabrication station) that builds the probes on the surface of an array, and a chip that is shipped to a user (col. 2, lines 57-62). Anderson describes methods for interfacing computer technology via a network in a remote manner with biological and chemical processing and synthesis equipment (col. 1, lines 37-54). Anderson describes controlling and/or monitoring equipment for synthesizing or processing biological or chemical materials from a remote location (col. 2, lines 1-4). Anderson describes a remote location is linked via the Internet to an internal server or intranet (col. 2, lines 53-57). Anderson describes a display of the information about the chip in Figure 4 (col. 3, second paragraph). The figure on the front page of the Anderson patent displays arrows in a cyclical manner (continuous) which represents that this process may occur multiple times with the "array synthesis equipment" representing a central fabrication station.

Shakib et al. teach an asynchronous store and forward data replication system and the method utilizing existing computer networks and/or network control software as a transport agent to deliver the communication messages (abstract). Shakib et al. teach a system and method which can generate information from a remote station (i.e., creation of new data, modification of

Art Unit: 1631

existing data, or deletion of existing data) (col. 3, lines 20-28), and communicate to another remote station over foreign networks such as the Internet or other Wide Area Network (WAN) (col. 5, lines 28-32). Shakib et al. teach the assignment of all data sets and individual objects which make up the data sets with unique IDs, allowing them to be tracked throughout the network (col. 4, lines 39-46). Furthermore, Shakib et al. teach the access of privileged information via use of IDs of the data set (col. 4, lines 50-57).

Zeleny et al. state that analysis of raw data from a biochip array collected by a scanner was previously performed manually which involved significant operator time as well as errors in the scanning and analysis procedure (col. 2, lines 4-10). One of ordinary skill in the art would have been motivated to automate microarray biochip experiments, as stated by Zeleny et al. (col. 1, lines 5-9). Therefore, it would have been obvious to add automated techniques, beginning with automated delivery of liquid reagents from vessels to the array (as stated by Hunkapiller et al. (col. 5, lines 7-11), using barcode identifiers and mapping reagent location as stated by Zeleny et al. in order to avoid unnecessary errors and speed efficiency, as stated by Zeleny (col. 2, lines 4-10). Shakib et al. teach the ability of data or data sets (i.e., information) transfer from a remote station, such to another remote station and the ability to generate unique identifiers to track down and access the data or data sets. The ability to communicate, access, or exchange data through network, such as e-mail, WAN, LAN, the Internet, etc., would be advantageous since it would allow communication of any information (even an array design) between physically separate individuals, companies, or entities, quickly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Shakib et al. as well as the distribution of microarrays (as stated by Brown et al.), array shipment

Art Unit: 1631

and evaluated by user (stated by Anderson, col. 2, lines 61-67) and portable storage media use (as stated by Balaban et al.) to the above teachings to expedite the data transfer/access, or more specifically, array designs and any pertaining information thereof, to the array generation scheme, and thus avoiding wasted use of operator time and errors as previously stated by Zeleny et al.

Thus, claims 1-14 are obvious over the cited references.

Applicant has interpreted a feature of their invention to include a map of the identity of the source vessels per se, and not just the biopolymers obtained therefrom, is obtained and printed onto the array substrate, in addition to the biopolymers. It is believed that Applicant is referring to step (c) of instant claims 1 and 8. This statement is found unpersuasive as claims 1 and 8, step (c) can be interpreted broader than the Applicant's interpretation. First, step (c) of both claims involves saving a map in a memory of the identity of the vessels to the corresponding regions of the substrate onto the biopolymers from respective vessels are deposited, in association with a map identifier. Zeleny et al. describe a machine-readable identifier which is imprinted on the chip prior to deposition of the array experiment (col. 2, lines 18-20). Zeleny et al. describe a file is opened on a computer system where the operator may enter various parameters of the experimental array including a map of the reagents deposited in the array (col. 2, lines 20-25). Therefore, Zeleny et al. describe a map identifier as well as a map of the reagents from vessels. Parameters describing the reagents in the vessel represent an identification of the vessel, much like strawberry jam alone sufficiently represents the

Art Unit: 1631

identification of a vessel or jar of strawberry jam. Applicant's arguments are considered unpersuasive, and the 35 U.S.C. 103 (a) rejection is maintained.

### ***Conclusion***

No claim is allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR §1.6(d)). The CM1 Fax Center number is (703) 872-9306.



Art Unit: 1631

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carolyn Smith, whose telephone number is (571) 272-0721. The examiner can normally be reached Monday through Thursday from 8 A.M. to 6:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached on (571) 272-0722.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instruments Examiner Tina Plunkett whose telephone number is (571) 272-0549.

June 14, 2004

*Ardin H. Marschel* 6/23/04  
ARDIN H. MARSCHEL  
PRIMARY EXAMINER